HVTECK AL 3/C 90TRXLPE TS PVC AIA PVC 5kV 100% CSA

3 Conductor, 90 Mils Tree Retardant Cross Linked Polyethylene, 100% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

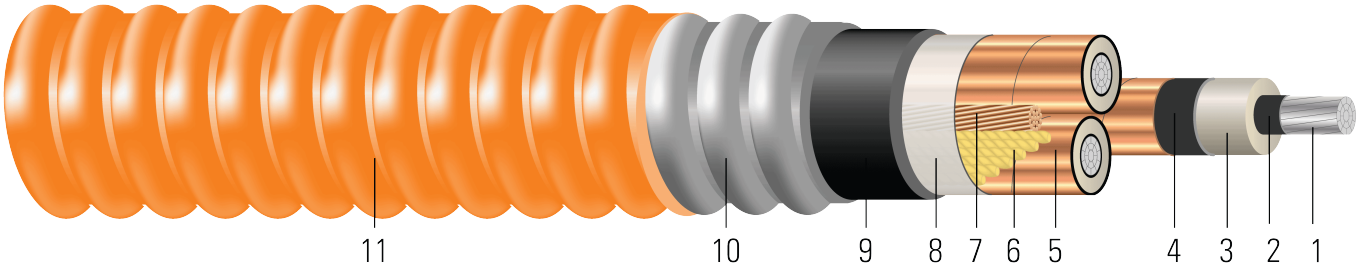

Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

1. **Conductor:** Class B compact stranded 8000 Series aluminum per ASTM B800 and ASTM B836
2. **Conductor Shield:** Semi-conducting cross-linked copolymer; A conductor separator is used for cable size larger than or equal to 500 Kcmil
3. **Insulation:** 90 Mils Tree Retardant Cross Linked Polyethylene 100% insulation level
4. **Insulation Shield:** Strippable semi-conducting cross-linked copolymer
5. **Copper Tape Shield:** Helically wrapped 5 mil copper tape with 25% overlap
6. **Filler:** Interstices filled with non-hydroscoping/non-wicking fillers
7. **Grounding Conductor:** Class B compressed stranded bare copper ground per ASTM B3 and ASTM B8
8. **Binder:** Polypropylene tape
9. **Inner Jacket:** PVC inner jacket
10. **Armour:** Aluminum Interlocked Armour (AIA)
11. **Overall Jacket:** Orange Polyvinyl Chloride (PVC) Jacket

APPLICATIONS AND FEATURES:

Southwire's 5kV HVTECK is a CSA armoured cable for industrial and commercial medium voltage applications. Rated FT4, -40°C, Hazardous Locations (HL). These cables are capable of operating continuously at the conductor temperature not in excess of 105°C for normal operation, 140°C for emergency overload, and 250°C for short circuit conditions. Rated for 1000 lbs /FT maximum sidewall pressure. These cables feature sunlight and moisture resistance, exceptional corona resistance, resistance to most chemical soils and acids and are flame retardant.

SPECIFICATIONS:

- ASTM B801 Concentric-Lay-Stranded Conductors of 8000 Series Aluminum Alloy
- ASTM B836 Compact Rounded Stranded Aluminum Conductors
- CSA C22.2 No. 174 Cables in Hazardous Locations
- CSA C22.2 No. 2556 & No. 0.3 Wire and Cable Test Methods
- CSA C68.10 Shielded Power Cables for Commercial and Industrial Applications - 5 to 46 KV
- CSA C68.3 Shielded & Concentric Neutral Power Cable - 5 to 46 kV
- CSA LTGG [-40°C] - as per C68.10 - for Cold Bend and Impact rating
- CSA HL - for Hazardous Locations rating
- CSA SUN RES - for Sunlight Resistant rating
- ICEA S-93-639 (NEMA WC 74) 5-46 KV Shielded Power Cable

- ICEA T-29-520 Flame Test (210,000 BTU/Hr)
- IEEE 383 Flame Test (70,000 btu)
- IEEE 1202 FT4 Flame Test (70,000) BTU/hr Vertical Tray Test
- FT1 Flame Test (1,706 BTU/Hr nominal - Vertical Wire Flame Test)
- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV (Qualification Test Requirements)

SAMPLE PRINT LEGEND:

(CSA) SOUTHWIRE (NESC) #P# 3/C [#AWG or #kcmil] CPT AL 90 TRXLPE AIA 5kV 100% INS LEVEL 25% TS SUN RES 105°C FT4 HL (-40°C) LTGG RoHS YEAR [SEQUENTIAL METER MARKS]

Table 1 – Weights and Measurements

Cond. Size	Strand	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Ground Size	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Approx. Weight
AWG/ Kcmil	No.	inch	inch	mil	inch	AWG	mil	inch	mil	inch	lb/1000ft
2	7	0.268	0.486	90	0.546	8	80	1.738	60	1.858	1357
1	19	0.298	0.516	90	0.576	6	80	1.803	60	1.923	1473
1/0	19	0.336	0.554	90	0.614	6	80	1.885	60	2.005	1711
2/0	19	0.376	0.594	90	0.654	6	80	1.971	60	2.091	1884
3/0	19	0.422	0.640	90	0.700	6	110	2.131	60	2.251	2217
4/0	19	0.474	0.692	90	0.752	6	110	2.243	60	2.363	2472
250	37	0.520	0.746	90	0.806	4	110	2.360	75	2.510	2804
350	37	0.615	0.841	90	0.901	4	110	2.565	75	2.715	3342
500	37	0.735	0.961	90	1.021	3	110	2.824	75	2.974	4100
750	61	0.908	1.144	90	1.204	2	125	3.249	85	3.419	5510
1000	61	1.060	1.296	90	1.356	2	125	3.578	85	3.748	6683

All dimensions are nominal and subject to normal manufacturing tolerances
◊ Cable marked with this symbol is a standard stock item
* Strand count meets minimum number per ASTM

Table 2 – Electrical and Engineering Data

Cond. Size	Min Bending Radius	Max Pull Tension	DC Resistance @ 25°C	AC Resistance @ 90°C	Capacitive Reactance @ 60Hz	Inductive Reactance @ 60Hz	Zero Sequence Impedance*	Positive Sequence Impedance*	Phase Short Circuit Current @ 60Hz	Allowable Ampacity In Air 90°C	Allowable Ampacity Directly Buried 90°C
AWG/ Kcmil	inch	lb	Ω/1000ft	Ω/1000ft	MΩ*1000ft	Ω/1000ft	Ω/1000ft	Ω/1000ft	Amp	Amp	Amp
2	13.0	1194	0.267	0.336	0.040	0.039	0.697 + j0.556	0.336 + j0.039	1691	135	157
1	13.4	1506	0.211	0.266	0.037	0.038	0.631 + j0.536	0.266 + j0.036	1784	154	178
1/0	14.0	1900	0.168	0.211	0.034	0.036	0.58 + j0.513	0.211 + j0.035	1902	176	202
2/0	14.6	2395	0.133	0.167	0.031	0.035	0.539 + j0.49	0.167 + j0.034	2026	204	229
3/0	15.7	3020	0.105	0.133	0.028	0.034	0.507 + j0.466	0.133 + j0.032	2168	234	260
4/0	16.5	3808	0.084	0.105	0.025	0.033	0.48 + j0.439	0.105 + j0.031	2329	268	294
250	17.5	4500	0.071	0.090	0.024	0.032	0.465 + j0.414	0.09 + j0.031	2497	296	323
350	19.0	6300	0.050	0.065	0.021	0.031	0.437 + j0.374	0.065 + j0.029	2791	363	386
500	20.8	9000	0.035	0.046	0.018	0.030	0.41 + j0.33	0.046 + j0.028	3163	447	465
750	23.9	13500	0.024	0.033	0.015	0.029	0.381 + j0.275	0.033 + j0.027	3730	566	563
1000	26.2	18000	0.018	0.026	0.013	0.028	0.359 + j0.238	0.026 + j0.026	4201	661	638

* Inductive impedance is based on non-ferrous conduit with one diameter spacing.

Table 3 – Weights and Measurements (Metric)

Cond. Size	Strand	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Ground Size	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Approx. Weight
AWG/ Kcmil	No.	mm	mm	mm	mm	AWG	mm	mm	mm	mm	kg/km
2	7	6.81	12.34	2.29	13.87	8	2.03	44.15	1.52	47.19	2019
1	19	7.57	13.11	2.29	14.63	6	2.03	45.80	1.52	48.84	2192
1/0	19	8.53	14.07	2.29	15.60	6	2.03	47.88	1.52	50.93	2546
2/0	19	9.55	15.09	2.29	16.61	6	2.03	50.06	1.52	53.11	2804
3/0	19	10.72	16.26	2.29	17.78	6	2.79	54.13	1.52	57.18	3299
4/0	19	12.04	17.58	2.29	19.10	6	2.79	56.97	1.52	60.02	3679
250	37	13.21	18.95	2.29	20.47	4	2.79	59.94	1.91	63.75	4173
350	37	15.62	21.36	2.29	22.89	4	2.79	65.15	1.91	68.96	4973
500	37	18.67	24.41	2.29	25.93	3	2.79	71.73	1.91	75.54	6101
750	61	23.06	29.06	2.29	30.58	2	3.18	82.52	2.16	86.84	8200
1000	61	26.92	32.92	2.29	34.44	2	3.18	90.88	2.16	95.20	9945

All dimensions are nominal and subject to normal manufacturing tolerances
◊ Cable marked with this symbol is a standard stock item
* Strand count meets minimum number per ASTM

Table 4 – Electrical and Engineering Data (Metric)

Cond. Size	Min Bending Radius	Max Pull Tension	DC Resistance @ 25°C	AC Resistance @ 90°C	Capacitive Reactance @ 60Hz	Inductive Reactance @ 60Hz	Zero Sequence Impedance*	Positive Sequence Impedance*	Phase Short Circuit Current @ 60Hz	Allowable Ampacity In Air 90°C	Allowable Ampacity Directly Buried 90°C
AWG/ Kcmil	mm	newton	Ω/km	Ω/km	MΩ*km	Ω/km	Ω/1000ft	Ω/1000ft	Amp	Amp	Amp
2	330.20	5313	0.8760	1.10	0.0122	0.1280	0.697 + j0.556	0.336 + j0.039	1691	135	157
1	340.36	6702	0.6923	0.87	0.0113	0.1247	0.631 + j0.536	0.266 + j0.036	1784	154	178
1/0	355.60	8455	0.5512	0.69	0.0104	0.1181	0.58 + j0.513	0.211 + j0.035	1902	176	202
2/0	370.84	10658	0.4364	0.55	0.0094	0.1148	0.539 + j0.49	0.167 + j0.034	2026	204	229
3/0	398.78	13439	0.3445	0.44	0.0085	0.1115	0.507 + j0.466	0.133 + j0.032	2168	234	260
4/0	419.10	16946	0.2756	0.34	0.0076	0.1083	0.48 + j0.439	0.105 + j0.031	2329	268	294
250	444.50	20025	0.2329	0.30	0.0073	0.1050	0.465 + j0.414	0.09 + j0.031	2497	296	323
350	482.60	28035	0.1640	0.21	0.0064	0.1017	0.437 + j0.374	0.065 + j0.029	2791	363	386
500	528.32	40050	0.1148	0.15	0.0055	0.0984	0.41 + j0.33	0.046 + j0.028	3163	447	465
750	607.06	60075	0.0787	0.11	0.0046	0.0951	0.381 + j0.275	0.033 + j0.027	3730	566	563
1000	665.48	80100	0.0591	0.09	0.0040	0.0919	0.359 + j0.238	0.026 + j0.026	4201	661	638

* Inductive impedance is based on non-ferrous conduit with one diameter spacing.